

**What is Claimed is:**

1. A controlled descent device comprising:

a housing;

a rotatable drum supported within said housing;

5 a line wound around said drum adapted for extraction and retraction from said housing;

a brake mechanism for engaging said drum to produce a resisting force during line extraction; and

10 a manufactured mechanism linking said brake mechanism to said drum for producing a rotational motion in one direction and fixed motion in the opposite direction.

2. The controlled descent device of claim 1 wherein said manufactured mechanism is a one-way bearing.

15 3. The controlled descent device of claim 2 wherein said one-way bearing is selected from the group consisting of back stopping, clutch, indexing, ramp type roller, sprag and sprag clutch/roller bearing combinations.

20 4. The controlled descent device of claim 2 wherein said brake mechanism includes a pinion gear with a shaft supported on said housing, and a brake hub supported on said shaft by said one-way bearing.

5. The controlled descent device of claim 1 wherein the line is constructed of flat webbing.

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7. The controlled descent device of claim 5  
5 wherein said drum has side walls spaced slightly wider  
than the webbing width, whereby said line is adapted to  
be wound on said drum in consecutive layers.

9. The controlled descent device of claim 8  
15 further including a cylindrically shaped roller supported  
by said housing for directing said line onto and off of  
said drum.

11. The controlled descent device of claim 10  
25 wherein each of said joined ends has a loop wherein said  
linkage comprises a cylinder supported within each loop,  
and a bolt passing through holes formed in each loop and  
through each cylinder.

12. The controlled descent device of claim 10  
30 wherein each of said joined ends has a loop, wherein said

linkage comprises a screw lock link passing through the loops.

13. The controlled descent device of claim 10 wherein each of said joined ends has a loop, wherein said  
5 linkage comprises a plate supported within each said loop, and at least one screw passing through the loops and plates.

14. In a controlled descent device including a housing, a rotatable drum supported within said housing,  
10 a line wound around said drum adapted for extraction and retraction from said housing, a brake mechanism for engaging said drum to produce a resisting force during line extraction; wherein the improvement comprises a manufactured mechanism linking said brake mechanism to  
15 said drum for producing a rotational motion in one direction and fixed motion in the opposite direction.

15. The controlled descent device of claim 14 wherein said manufactured mechanism is a one-way bearing.

16. The controlled descent device of claim 15 wherein said one-way bearing is selected from the group consisting of back stopping, clutch, indexing, roller  
20 ramp type, sprag and sprag clutch/roller bearing combinations.

17. A controlled descent device comprising:

25 a housing;

a rotatable drum supported within said housing;

a line wound around said drum adapted for extraction and retraction from said housing;

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wherein said line further comprises an internal permanent portion and a distal replaceable portion, said permanent portion and said replaceable portion having ends joined by a linkage, whereby said replaceable portion is adapted to be replaced when worn.

18. The controlled descent device of claim 27 wherein each of said joined ends has a loop wherein said linkage comprises a cylinder supported within each loop, and a bolt passing through holes formed in each loop and through each cylinder.

19. The controlled descent device of claim 27 wherein each of said joined ends has a loop, wherein said linkage comprises a screw lock link passing through the loops.

20. The controlled descent device of claim 27 wherein each of said joined ends has a loop, wherein said linkage comprises a plate supported within each said loop, and at least one screw passing through the loops and plates.